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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,354	10/14/2003	Robert D. Tolles	05542-285003 / 2771D2	6702

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Applied Materials, Inc.
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EXAMINER

CHACKO DAVIS, DABORAH

ART UNIT PAPER NUMBER

1756

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,354

Applicant(s)

TOLLES, ROBERT D.

Examiner

Daborah Chacko-Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-23, 25, 27-42, and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. Patent No. 6,210,254 (Cook et al) in view of U. S. Patent No. 5,258,236 (Arjavalasingam et al).

Cook, in col 5, lines 35-67, in col 6, lines 25-37, and in col 7, lines 7-13, and in col 8, lines 1-12, and in figure 1, and figures 5a through 5d, discloses an exposure method (photolithography process) wherein a mask (reference 18) that comprises a transparent region (reference 22) and an opaque region is disposed between the radiation source and the polishing pad adhesive layer (precursor material layer on a substrate), such that the radiation passes through the transparent region and is blocked at the opaque region, and selectively exposing the precursor material (adhesive layer) through the mask, thereby causing photocuring of only the irradiated portion of the precursor material (claims 22, and 37-39). Cook, in col 5, lines 51-52, discloses that the radiation beam is ultraviolet light (claim 23). Cook, in col 3, lines 15-17, discloses that the mask can be a material that blocks (behaves as a barrier) the ultraviolet light (claim 25). Cook, in col 5, lines 40-44, discloses that the photomask is made of polymeric material (claims 27-28). Cook, in col 3 lines 19-21, discloses that the transparent region

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is an opening (claim 29). Cook, in col 3, lines 23-27, in col 4, lines 1-4, and in col 6, lines 58-67, and in figures 5a-5d, discloses that the mask has a plurality of transparent regions and opaque regions that are circular and the transparent regions (see figure 5b) are circular or formed of arc segments, or of any geometric configuration (claims 30-33). Cook, in col 4, lines 45-48, discloses that the ratio of the surface area of the cured region to a surface area of the uncured (adhesive region) is less than 50% (claim 34). Cook, in col 5, lines 58-61, discloses that the exposure is performed for about 45 seconds (claim 35). Cook, in col 5, lines 53-55, discloses that the UV light source provides an intensity of about 7milliwatts/cm² (claim 36). Cook, in col 3, lines 29-47, discloses that the precursor material (adhesive layer) can be cured at different depths (partially cured) (claim 40). Cook, in col 3, lines 48-55, discloses that the precursor material (selected portions) can be completely cured (claim 41). Cook, in col 2, lines 1-14, discloses that the adhesive material layer (precursor material) is acrylic based (claim 42). Cook, in col 6, lines 58-65 and in figure 5b, discloses that the transparent opening is in the center of the mask (claim 44). Cook, in col 2, lines 27-59, discloses that the precursor material (adhesive) comprises rubber material (claim 45).

The difference between the claims and Cook is that Cook does not disclose that the exposure alters the adhesiveness of the polymeric precursor.

Arjavalingham, in the abstract, and in col 2, lines 23-45, discloses that the adhesive layer (separation layer) degrades in its adhesive ness when exposed to UV radiation.

Therefore, it would be obvious to one skilled in the art to modify Cook by altering the adhesiveness of the photopolymerizable layer as taught by Arjavalingham because Arjavalingham in col 2, lines 5-15, discloses that the exposure of the separation layer to the UV radiation enables the separation layer to be released from the substrate with ease.

3. Claims 24, 26, and 43, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. Patent No. 6,210,254 (Cook et al) in view of U. S. Patent No. 5,258,236 (Arjavalingham et al) as applied to claims 10, 12-13, 15, and 18-21 above, and further in view of U. S. Patent No. 4,063,812 (Abraham et al).

Cook in view of Arjavalingham is discussed in paragraph no. 6.

The difference between the claims and Cook in view of Arjavalingham is that Cook in view of Arjavalingham does not disclose that the transparent region of the mask is made of a UV transparent quartz or polymer material (claim 24). Cook in view of Arjavalingham does not disclose that the mask is made of metallic material (claim 26). Cook in view of Arjavalingham does not disclose that the mask is made of borosilicate glass (claim 43).

Abraham, in col 2, lines 45-60, discloses that the transparent regions are UV transparent quartz, and that the mask can be made of metallic material such as silver, or of ceramic material such as borosilicate glass.

Therefore, it would be obvious to a skilled artisan to modify Cook in view of Arjavalingham by employing the mask material suggested by Abraham and positioning a

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shutter between the mask and the radiation source as taught by Abraham because Cook, in col 3, lines 16-18 discloses that the mask can be made of any material that behaves as a barrier to UV light in the opaque regions and is transparent to UV in the transparent regions, and because Abraham, in col 2, lines 45-50, discloses that the radiation source is not directly irradiated onto the mask, it is passed through suitable filters and shutters prior to irradiating the mask, and in col 3, lines 4-6, discloses that filtering the lamp (using filters, shutters and condensor) enables the observation of Newton fringes that is indicative of the dirt particles in the immediate environment.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd


August 9, 2004.



**JOHN A. MCPHERSON
PRIMARY EXAMINER**